

## PSG 149, *Achrioptera* sp.

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Taxonomic note by P.E. Bragg.

### Key words

Phasmina, *Achrioptera* sp., rearing, breeding.

### Taxonomy

This species has been listed on the PSG species list as *Achrioptera punctipes* (Audinet-Serville), however enquiries suggest that no one has actually made a proper attempt at identifying this culture; the name was applied to it on the basis of a general similarity. There are 8 described species in the genus which was originally described by Coquerel (1861: 495). All the known species are recorded from Madagascar or the Republic of Comoros.

Based on the illustrations and description given by Frank Hennemann, four of the six species in Redtenbacher's key (1908: 439) can be eliminated because of the spination or wing size. The two remaining possibilities are *A. punctipes* and *A. intermedia* Redtenbacher. The former, according to Redtenbacher's key, does not have spines on the head; a condition which is variable in the species described here, although head spines are usually present. The female of this species is larger than records for *A. punctipes* and the female of *A. intermedia* is unknown. Of the two species described since 1908, *A. composita* Carl (1913: 42) and *A. griveaudi* Paulian (1960: 272), the former seems a likely prospect. Without examining specimens of the species described here, and preferably also the type specimens involved, I would not like to put a name to this species. For the present it would seem best to refer to it as *Achrioptera* sp.

### Culture origin & Distribution

The culture was originally imported by Frederic le Corre from Fianarantsoa, Madagascar. The wild caught male in my collection comes from Antananarivo, the capital of Madagascar.

### Females (Figures 1a, 2a-c & 7)

This is a very beautiful, large, spiny and winged species. The females in captivity have body lengths reaching 225-242 (186-200mm excluding the operculum); the maximum body width is about 12mm when in full egg production. The leg lengths are: fore 46-48mm, mid 39-41mm, hind 62-64mm. The antennae are coloured dark reddish-brown, with the first segment coloured bright yellow, and are about 28-29mm long. Typical body colouring is a mixture of different shades of brown and green with some white markings on the head, mesonotum and sides of the metanotum. The mesonotum is quite long, uniform greyish-brown with a white patch at the end, and bears many long, pointed, black tipped thorns whose bases are coloured bright green. The metathorax has long thorns ventrally, they have the same colouring as those on the mesonotum. There are sometimes two yellow spines on the head, but these are totally absent in some individuals; there are also some individuals with only one spine.

The abdomen coloured creamy grey-brown with some white stripes on both sides of each abdominal segment. The first abdominal segment bears two little green spines, the others are always unarmed. The fleshy joints between the segments are all slightly red coloured. There is a very long chute at the end of the abdomen which is a uniform brown in colour, and about 40-45mm long. The cerci are small and leaf-like. The legs are all quite short and strong, covered with many lobes and serrations, especially the fore tibiae which bear some very large leaf-like and serrated lobes (Fig. 2a). Ventrally the hind legs bear many long spines (Fig. 2b) which are used for defence in a similar way to *Heteropteryx dilatata* (Parkinson) or *Haamiella* spp. The fore legs are coloured brown and the mid legs green; both have some small white spots on them. The hind legs are

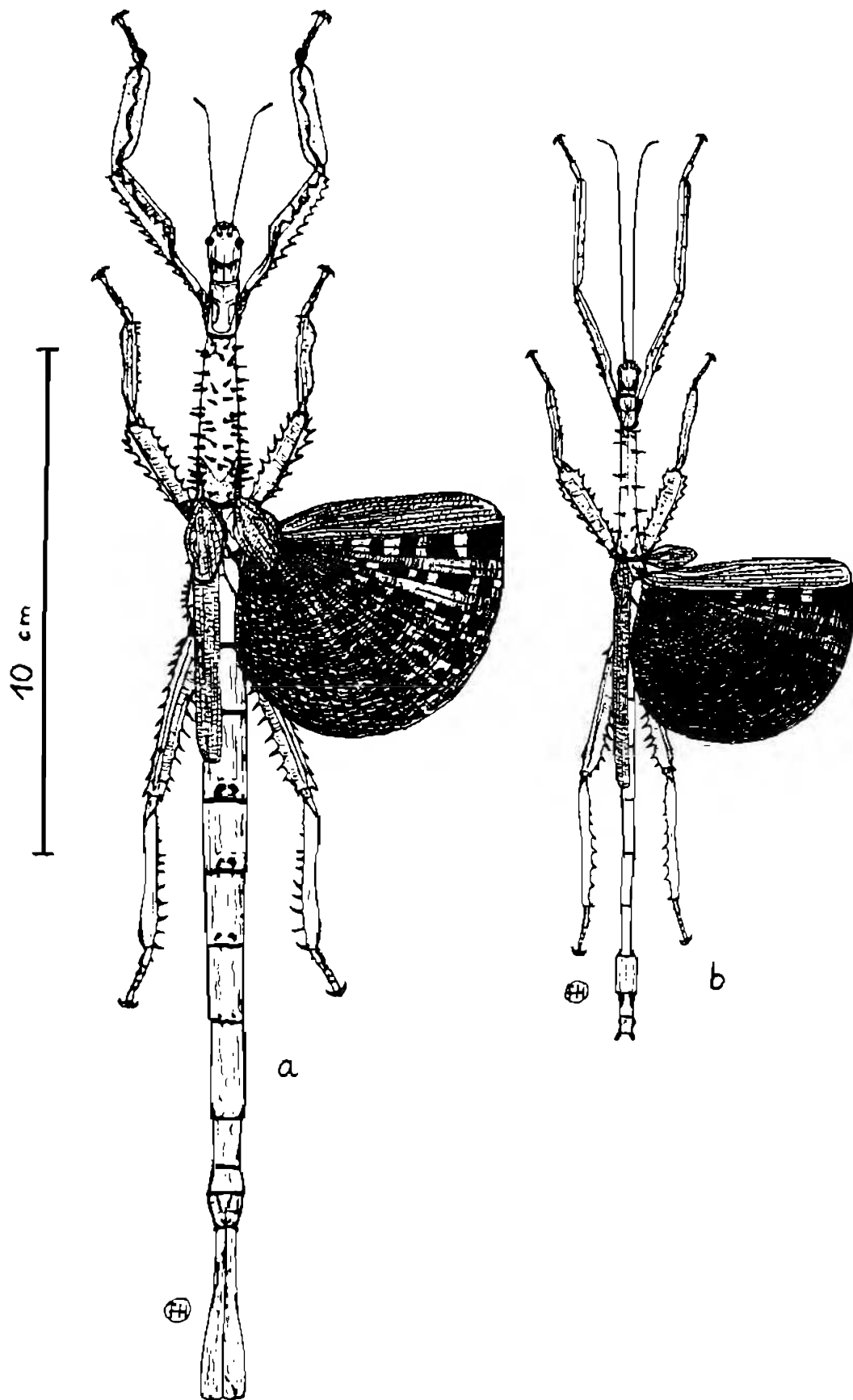
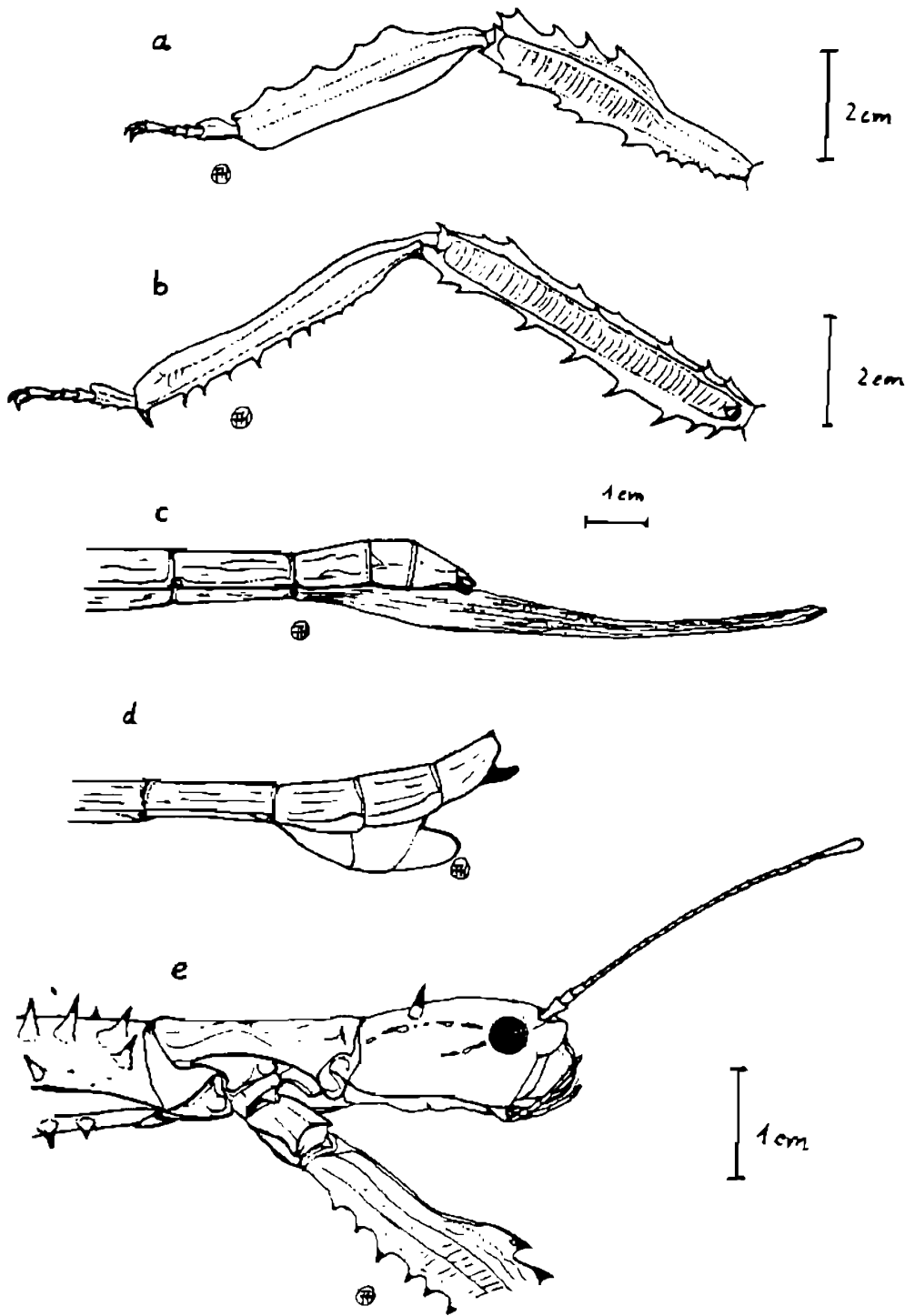


Figure 1. Adult *Achrioptera* sp. (a) Female. (b) Male.

mainly brown but are red ventrally. There is a well developed pair of wings which span about 100-110mm. They are mottled grey, black, and white. The edges are coloured in different shades of brown, green, yellow and red. The undersides of the wing edges are coloured dark red with some yellow shading.



**Males**

The male is one of the most beautiful phasmids that I have ever seen. In captivity they reach body lengths of 125-130mm, with a maximum width of about 5mm at wing level. The one wild caught specimen in my collection has a length of 134mm. The mesonotum bears many large pointed spines, as in the female. The head often bears two small yellowish spines. The males are very beautifully coloured, having a goldish-brown head, a bright yellow abdomen, with the pronotum and mesonotum a glossy blueish-green. There are some white stripes on the head and a bright red patch on both sides of the pronotum. The mid and hind legs are a blueish-green colour, and bright red ventrally. The front legs are the same colour as the head and all three pairs of legs are covered by

**Figure 2.** (a) ♀ Front leg (b) ♀ Hind leg (c) ♀ Operculum (d) ♂ Terminal segments (e) Lateral view of head.

many small white spots. All the legs are covered with long pointed spines which are used for

defence. The antennae are longer than the females', being about 48mm.

Like the females they possess a well developed pair of wings which span about 95mm. They are a similar coloration to those of the female but are much darker. The edges are coloured bright green and red with a white elongated patch at the joint.

### Eggs (Figure 3)

These are irregularly formed, quite flattened and look a bit like a piece of bark. They are 9.5mm long, 4.5mm wide and 2.5mm high. The colouring is mostly straw but sometimes eggs are darker on the sides; when recently laid they look greenish. The operculum is a small greyish oval plate which is surrounded by a large cone shaped "coronet" (similar to *Extatosoma tiaratum* (Macleay)). The micropylar plate is elongated and almost reaches from one end of the egg to the other. It is interesting to see that, if you break an egg, the contents are a dark wine-red. This I have only previously seen in eggs of *Lonchodes haematomus* Westwood.

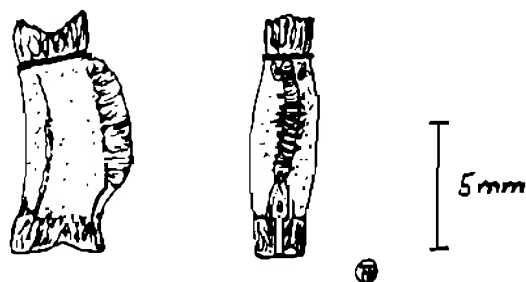


Figure 3. Lateral and dorsal views of eggs.

Each female lays about two eggs per 24 hours but I also had one which laid up to four per day. When females are near to death the eggs will shrink a little bit, as with all *Phyllium* species, and usually do not hatch. In my opinion the eggs are best incubated on damp peat at temperatures of about 25-30°C. The humidity should be kept high, so it is a good idea to spray the eggs every second day. In these conditions hatching takes about six months. Hanjo Hellmann (PSG member 956) kept eggs in the above conditions and told me that he had a hatching rate near to 100%. My hatching rate in the first generation was about 90%.

### Nymphs (Figures. 4 & 5)

Eggs may hatch at any time but most of mine hatch in the afternoon, between 1400 and 1600. When newly hatched, nymphs have a body length of 24mm and an overall length of 32mm, with the antennae being 2mm long. The body colour is a uniform dark brown, becoming mid brown as they become older; sub-adult males have a white patch between the wings. The head is quite bulbous and the antennae are reddish-brown in colour. The legs are all the same colour as the body except that there is a small light brown patch on each joint, and the first segment of the tarsus is white. Even at first instar the legs bear some small lobes.

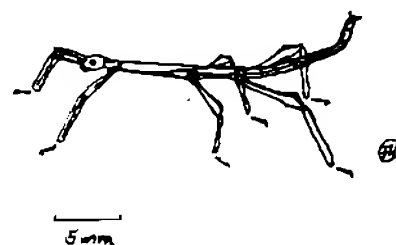


Figure 4. Newly hatched nymph.

They can be sexed when they reach the third instar, by the small knobs on the tail of the males. The operculum of the females can also be seen from the third instar onwards but does not look like that of the adult, it looks more like a drinking straw.

With last instar female nymphs it is always a good idea to keep them in separate cages, only one nymph to a cage, to give them plenty of room. Otherwise they should be kept in a very large cage. The typical resting position that is taken up by nymphs is quite interesting to look at (Fig. 5) because they hold the mid legs doubled up and then backwards against the metathorax; the other

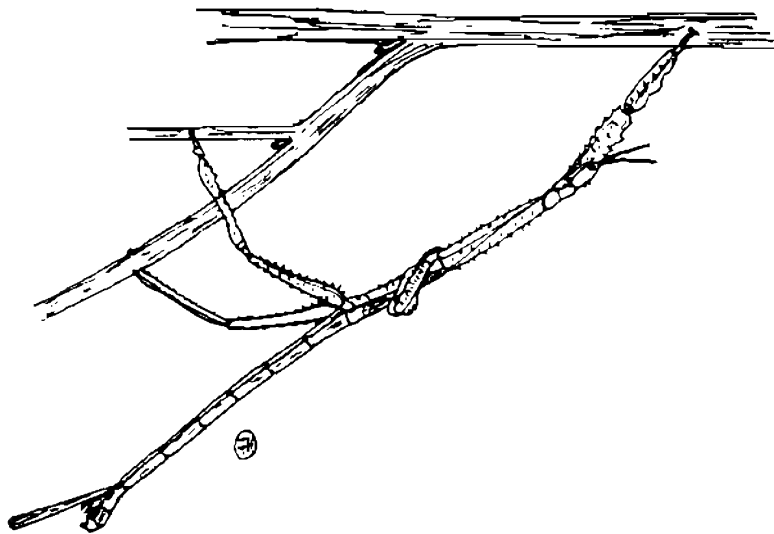


Figure 5. Female nymph in typical resting position.

hind legs.

When an adult female sitting on the foodplant in the cage is tapped sharply with a finger, at any part of the body or head, the insect quickly walks away, stretches the body, opens the wings, holding them up like sails, and pinches with the hind legs if the disturbance continues. Sometimes it may even be reason enough to do this if the twig they hang on is shaken or moved. When opening the wings they may sometimes even produce loud hissing noises like *Heteropteryx dilatata* and *Haaniella* spp.

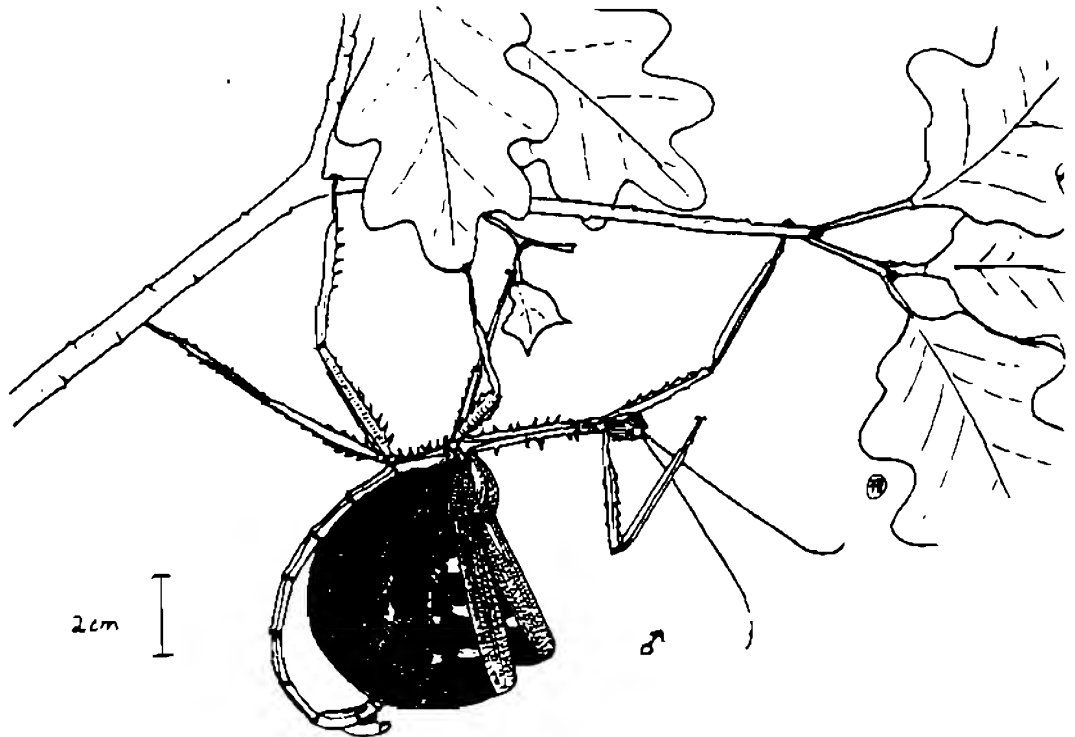


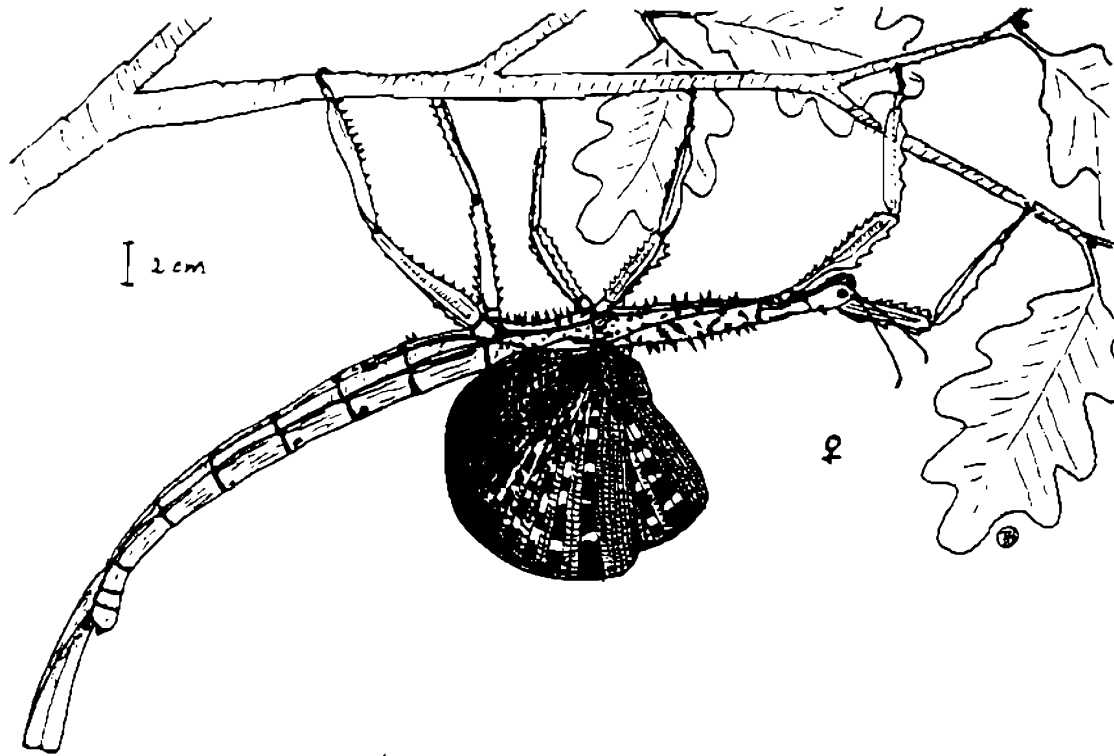
Figure 6. Defence reaction of the male.

Adult males will do all of the above but run much faster and will sometimes even walk around with the wings open for several minutes.

legs are usually held stretched out. I have never seen adults doing this.

#### Defence

In general the defensive behaviour of phasmids is passive but this species shows a remarkable and active defensive behaviour. First instar nymphs are quite active and will run quickly when disturbed, sometimes with the abdomen rolled up like *Extatosoma tiaratum* nymphs. Larger nymphs do the same or remain still, while last instar nymphs will also try to pinch with their



**Figure 7.** Defence reaction of the female.

### Foodplants

This species readily eats guava (*Psidium guajava*), oak (*Quercus robur*) and bramble (*Rubus* sp.). Of these, guava seems to be the favourite food.

### Rearing

This is one of the more difficult species to rear successfully and many people have reported having problems with them. However I have had good success by keeping them in the following conditions. I keep adults and nymphs together in a wooden, gauze covered cage which is covered all round by foliage to provide some humidity. However there is some ventilation which is important because they do not seem to like too damp conditions; in my first generation I lost most of my nymphs by keeping them too damp. I lightly spray them once per day because both nymphs and adults appreciate drinking the water droplets from the leaves. Large female nymphs in particular need plenty of space to shed their skins. Nymphs seem to die at all stages but mortality is especially high in the first instar.

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